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CASCHERA, ANTONIO A

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/733,860

Applicant(s)

BERGER, TORSTEN

Examiner

Antonio A. Caschera

Art Unit

2628

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 October 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-42 and 45-48 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-42 and 45-48 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date. _____ | 6) <input type="checkbox"/> Other: _____ |

.DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. Receipt is acknowledged of a request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e) and a submission, filed on 10/31/07.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

2. Claims 1-22 and 34-40 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

In reference to claims 1 and 10, the language of the claims (claims 1 and 10 and their dependent upon claims respectively) raise questions as to whether the claims fall within any of the statutory categories of invention. Specifically, the claim language of “A three-dimensional graphical user interface element...” (see line 1 of claim 1) and “A three-dimensional haptic graphical user interface element...” (see line 1 of claim 10) are not directed to a process within the meaning of 35 U.S.C. 101, since they are not a series of steps or acts being performed, are not directed to a machine within the meaning of 101, since they are not a part of a device or a combination of devices, are not directed to a manufacture within the meaning of 101, since they are not an article produced from raw or prepared materials nor are they a composition of matter within the meaning of 101, since they are not a combination of two or more substances or do

they have any mass to be matter. Further, the specification provides evidence enabling one of ordinary skill in the art to reasonably interpret the “user interface element” recited in the claims as software (see page 67, lines 7-10 of Applicant’s specification). Therefore, claims recite software per se, which fails to fall within a statutory category of invention and necessitates the rejection of claims 1-22 and 34-40. Note, all other remaining claims that have not been listed above, have been established as statutory under 35 U.S.C 101.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-11, 30-40, 42 and 45-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Staiger, Phillip. (“Tutorial – Amapi 4.1.5 Material Editor” Revised January 1, 2001. © 2000-2001 TGS, Inc. <http://www.tgs.com>. Accessed on 09/08/2006 via <http://www.thebest3d.com/amapi/tutorials/materialeditor/>) in view of Staiger et al. (“Tutorial – Getting started with Amapi 4.1” Revised July 9, 2003. © 2000 TGS, Inc. <http://www.tgs.com>. Accessed on 04/17/2007 via <http://www.thebest3d.com/amapi/tutorials/bottlesmile/index.html>).

In reference to claims 1 and 10, Staiger discloses a tutorial for editing a soda can’s geometry including applying various materials as 2D and 3D textures using the GUI of a program entitled Amapi (see page 1, before “Getting Started” and GUI of Figure on page 2).

Staiger explicitly discloses applying a “label” to the soda can, the “label” made of from a 2D image (see page 11). Staiger discloses adjusting the 2D image, seen as functionally equivalent to the texture of Applicant’s claims, utilizing a 3D GUI element (see “*” marked Figures of page 12, specifically the adjusting element comprising black squares or “hotspots”). Note, the Office interprets this element to be 3D since it is shown as being drawn in a 3D space (referring to the 3D soda can) and also because the element itself is displayed in the user interface as comprising three dimensions (see for example, the sphere and cylindrical shaped elements of the “*” marked Figures of page 12 and how they are drawn to with a x, y and depth attributes). Staiger specifically states the “black squares” of the element to be “hotspots” allowing the user to select and modify these “hotspots” to re-orient (rotate), scale and translate (move) the mapped image or texture, therefore allowing the user to select the desired region of the soda can where the texture is mapped (see underlined portion of page 12 and “*” marked Figures of page 12). Further, in reference to claim 10, the Office interprets the GUI element of Staiger functionally equivalent to the “three-dimensional haptic graphical user interface element” of Applicant’s claim since a user utilizing a mouse as input control for performing the material editing methods as described by Staiger inherently provides feedback via a display monitor of a computer system. Further, the “hotspots” of the element of Staiger provide a “haptic feedback” to the user since they allow the texture to be manipulated on the screen, notifying the user when the desired manipulation is accomplished. Staiger also discloses selecting the bottom of the can by simply clicking on the object and the ability of applying different materials to just that selected object/part (see pages 4-9). The Office interprets that this user-defined part is contiguous to the rest of the can since Applicant’s remarks define the term, “contiguous” as “sharing an edge or boundary; touching”

and "neighboring; adjacent" (see page 12 of Applicant's Remarks of 12/04/07). It can be seen from the Figures on pages 5, 9 and 10 that the bottom part of the soda can is "neighboring or adjacent" to the can and may also be considered less than the entire surface of the whole soda can. Although Staiger discloses the texture mapped onto a cylinder type of shape, Staiger does not explicitly disclose texture mapped onto an arbitrarily-shaped, user-defined region of a 3D virtual object. Staiger et al. discloses a tutorial for drawing a bottle using Amapi 4.1 (see pgs 10-24 and bottle in Figure of pg. 24). Staiger et al. explicitly discloses applying 2D or 3D texture to the bottle and an extracted piece, from the bottle object (pgs. 49-52 and especially pg. 51, paragraphs 3-5 and Figure on pg. 52). Note, the Office interprets the extracted piece of the bottle (see Figure of pg. 52) equivalent to Applicant's arbitrarily-shaped user-defined region of a surface of the claims since the above mentioned shape of Staiger et al. is arbitrarily-shaped, as described in Applicant's arguments of 12/06/06, and since a user can draw/design a multitude of different shapes in Amapi 4.1 as disclosed by Staiger et al. with the extracted object of the bottle in the Figure on pg. 52. It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the arbitrarily-shaped texture mapping techniques of Staiger et al. with the material editing techniques of Staiger in order to supply a user with the capabilities to create customized drawing and modeling objects utilizing texture maps to add realistic effects to the objects. Note, the Office further believes the above combination of Staiger and Staiger et al. to be valid since both references are tutorials on utilizing the same design tool software, Amapi 4.1. Lastly, Staiger et al. explicitly discloses the extracted piece object of the bottle, which is inherently "less than the entire surface of the 3D object," i.e. the bottle, texture mapped (see Figures on pgs. 46 and 52 and paragraphs 3-5 of pg. 51).

In reference to claims 2-4, 11 and 34-38, Staiger and Staiger et al. disclose all of the claim limitations as applied to claims 1 and 10 above. Staiger specifically states the “black squares” of the elements to be “hotspots” allowing the user to select and modify these “hotspots” to re-orient (rotate), scale and translate (move) the mapped image or texture, therefore allowing the user to select the desired region of the soda can where the texture is mapped (see underlined portion of page 12 and “*” marked Figures of page 12).

In reference to claim 5, Staiger and Staiger et al. disclose all of the claim limitations as applied to claim 1 above. Staiger explicitly discloses applying a “label” to the soda can, the “label” made from a 2D image (see page 11).

In reference to claim 6, Staiger and Staiger et al. disclose all of the claim limitations as applied to claim 1 above. Staiger explicitly discloses applying a “label” to the soda can, the “label” made from a 2D image (see page 11). Further, Staiger allows the user to set a tiling count for the mapped texture (see page 13).

In reference to claim 7, Staiger and Staiger et al. disclose all of the claim limitations as applied to claim 1 above. Staiger explicitly discloses applying a “label” to the soda can, the “label” made from a 2D image (see page 11). Further, Staiger allows the fine tune adjustment of the texture to create a bump or raised affect (see page 13).

In reference to claims 8 and 9, Staiger and Staiger et al. disclose all of the claim limitations as applied to claim 7 above. Staiger explicitly discloses applying a “label” to the soda can, the “label” made from a 2D image (see page 11). Further, Staiger allows the fine tune adjustment of the texture to create a bump or raised affect (see page 13). Note, the Office interprets the GUI element of Staiger to perform functionally equivalent to adjusting

height/depth of label since Staiger discloses adding another layer, utilizing the “hotspot” mapping element for a bump affect (see page 13).

In reference to claim 30, claim 30 is equivalent in scope to the limitations of claims 1 and 10 and is therefore rejected using equivalent rationale. In addition however, neither Staiger nor Staiger et al. explicitly disclose an apparatus comprising a memory storing code and a processor for executing the code which performs the texture adjusting techniques as discussed above with reference to claims 1 and 10. It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the arbitrarily-shaped texture mapping techniques of Staiger et al. and the material editing techniques of Staiger, which both utilize the graphical editing program Amapi, using some sort of computer system that inherently comprises some sort of memory comprising some sort of software/code/instructions/program which when executed by a processor performs the techniques described in Staiger and Staiger et al. since such software or graphical editing applications are well-known in the art to be executed using computer systems (Official Notice).

In reference to claims 31 and 32, Staiger and Staiger et al. disclose all of the claim limitations as applied to claim 30 above. Staiger specifically states the “black squares” of the element to be “hotspots” allowing the user to select and modify these “hotspots” to re-orient (rotate), scale and translate (move) the mapped image or texture, therefore allowing the user to select the desired region of the soda can where the texture is mapped (see underlined portion of page 12 and “*” marked Figures of page 12). Note, the Office interprets the GUI software/program Amapi, as disclosed by Staiger, to inherently provide some sort of selection and positioning component, notifying the program of a selection of a “hotspot,” based upon the

use of a mouse (and cursor) by the user, and moving the cursor to the “hotspot” in accordance with the user’s movement of the mouse (see underlined portion of page 12).

In reference to claim 33, Staiger and Staiger et al. disclose all of the claim limitations as applied to claim 30 above. Further, the Office interprets the GUI element of Staiger functionally equivalent to the “three-dimensional haptic graphical user interface element” of Applicant’s claim since a user utilizing a mouse as input control for performing the material editing methods as described by Staiger inherently provides feedback via a display monitor of a computer system. Further, the “hotspots” of the element of Staiger provide a “haptic feedback” to the user since they allow the texture to be manipulated on the screen, notifying the user when the desired manipulation is accomplished.

In reference to claims 39, 40 and 42, Staiger and Staiger et al. disclose all of the claim limitations as applied to claims 1, 10 and 30 respectively above. As seen in the Figures of page 12 of Staiger, it is interpreted by the Office that the GUI element used to rotate, scale and translate mapped texture inherently comprises of an x, y and z axis since the element is drawn in a 3D space. Further the Office notes, that claims 39, 40 and 42 do not explicitly disclose the graphical element as displaying an x, y and z axis and solely recite, “...wherein the graphical user interface element comprises an X-axis, a Y-axis and a Z-axis,” (see claims 39, 40 and 42).

In reference to claims 45 and 46, Staiger and Staiger et al. disclose all of the claim limitations as applied to claims 1 and 30 respectively above. Staiger et al. explicitly discloses applying 2D or 3D texture to the bottle and an extracted piece, from the bottle object (pgs. 49-52 and especially pg. 51, paragraphs 3-5 and Figure on pg. 52). Note, the Office interprets such an

extracted piece from the bottle to be equivalent to an object which is non-planar, non-spherical and non-cylindrical.

In reference to claims 47 and 48, Staiger and Staiger et al. disclose all of the claim limitations as applied to claims 1 and 30 respectively above. Staiger et al. also explicitly discloses setting perturbation amount to the texture mapped area (see pg. 51, 3rd paragraph) which the Office interprets as inherently equaling the texture not having to constrain to the boundary of the arbitrarily-shaped object of Applicant's claims.

4. Claims 12-16, 18 and 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Staiger, Phillip. ("Tutorial – Amapi 4.1.5 Material Editor" Revised January 1, 2001. © 2000-2001 TGS, Inc. <http://www.tgs.com>. Accessed on 09/08/2006 via <http://www.thebest3d.com/amapi/tutorials/materialeditor/>), Staiger et al. ("Tutorial – Getting started with Amapi 4.1" Revised July 9, 2003. © 2000 TGS, Inc. <http://www.tgs.com>. Accessed on 04/17/2007 via <http://www.thebest3d.com/amapi/tutorials/bottlesmile/index.html>) and further in view of Brown (U.S. Patent 5,461,709).

In reference to claim 12, Staiger and Staiger et al. disclose all of the claim limitations as applied to claim 10 above. Neither Staiger nor Staiger et al. explicitly disclose the haptic feedback comprising a gravity well associated with an active location however Brown does. Brown discloses a system for supplying input data establishing the location of data points in a model space for a 3D CAD design application (see column 1, lines 5-7 and column 2, lines 5-8). Brown discloses the ability to move the cursor close to an indexed point whereby a "sweet spot" of a few pixels wide is established near this indexed point and if the cursor is moved within this, "sweet spot" the cursor is locked into precisely a horizontal or vertical position with the indexed

point (see column 9, lines 40-46). Note, the Office interprets the “sweet spot” of Brown functionally equivalent to the “gravity well” of Applicant’s claim. It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the data point location techniques of Brown with the arbitrarily-shaped texture mapping techniques of Staiger et al. and material editing techniques of Staiger in order to provide an easier and more user-friendly interface, employing a sophisticated drawing aid based on the interpretation of the user controlled cursor, supplying extensive feedback control to the user (see column 3, lines 22-34 of Brown).

In reference to claim 13, Staiger and Staiger et al. disclose all of the claim limitations as applied to claim 10 above. Neither Staiger nor Staiger et al. explicitly disclose the haptic feedback comprising a haptic constraint however Brown does. Brown discloses a system for supplying input data establishing the location of data points in a model space for a 3D CAD design application (see column 1, lines 5-7 and column 2, lines 5-8). Brown discloses the ability to move the cursor close to an indexed point whereby a “sweet spot” of a few pixels wide is established near this indexed point and if the cursor is moved within this, “sweet spot” the cursor is locked into precisely a horizontal or vertical position with the indexed point (see column 9, lines 40-46). Note, the Office interprets the “sweet spot” of Brown functionally equivalent to the “gravity well” of Applicant’s claim. Brown further discloses the user to place a data point at the current position within the “sweet spot” and lock the point thereby allowing the user to snap to another item while allowing the above constraint, keeping the locked point aligned, to apply (see column 9, lines 59-65). It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the data point location techniques of Brown with the

arbitrarily-shaped texture mapping techniques of Staiger et al. and material editing techniques of Staiger in order to provide an easier and more user-friendly interface, employing a sophisticated drawing aid based on the interpretation of the user controlled cursor supplying extensive feedback control to the user (see column 3, lines 22-34 of Brown).

In reference to claim 14, Staiger, Staiger et al. and Brown disclose all of the claim limitations as applied to claim 13 above in addition, Brown discloses constraining a “snap to” cursor movement to a current plane (see column 15, lines 40-46) which the Office interprets as inherently disclosing constraining cursor movement to the surface of an object as a specific plane makes up the surface of an object (see column 15, lines 26-34 of Brown).

In reference to claim 15, Staiger, Staiger et al. and Brown disclose all of the claim limitations as applied to claim 13 above in addition, Brown discloses constraining a “snap to” cursor movement to a current plane (see column 15, lines 40-46) which the Office interprets as inherently disclosing constraining cursor movement to a user defined region (see column 15, lines 26-34 of Brown).

In reference to claim 16, Staiger, Staiger et al. and Brown disclose all of the claim limitations as applied to claim 13 above in addition, Brown discloses the ability to move the cursor close to an indexed point whereby a “sweet spot” of a few pixels wide is established near this indexed point and if the cursor is moved within this, “sweet spot” the cursor is locked into precisely a horizontal or vertical position with the indexed point (see column 9, lines 40-46). Note, this locked to a horizontal or vertical position of Brown is interpreted as equivalent to being constraint to an axis of Applicant’s claim (see Figure 7 of Brown).

In reference to claim 18, Staiger, Staiger et al. and Brown disclose all of the claim limitations as applied to claim 13 above. Although Brown discloses constraining the cursor to an axis via a “sweet spot” and locking technique (see claim 16 above), Staiger, Staiger et al. nor Brown explicitly disclose constraining the cursor to a loop. At the time the invention was made, it would have been obvious to one of ordinary skill in the art to constrain the cursor to any geometric figure including a circular shape or loop. Applicant has not disclosed that constraining the cursor to a loop provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant’s invention to perform equally well with the axis constraint of Brown because the exact restraints put on the movement of the cursor solely magnifies the amount of feedback to the user provided by the system and hence the level of necessary feedback would be chosen as preferred and best suited to the application at hand. Therefore, it would have been obvious to one of ordinary skill in this art to modify the combination of Staiger, Staiger et al. and Brown to obtain the invention as specified in claim 18.

In reference to claims 20-22, Staiger, Staiger et al. and Brown disclose all of the claim limitations as applied to claim 13 above. Staiger discloses adjusting the 2D image, seen as functionally equivalent to the texture of Applicant’s claims, utilizing a 3D GUI element (see “*” marked Figures of page 12 and underlined portion of page 12, specifically the adjusting element comprising black squares or “hotspots” being activated by the user moving a cursor over certain areas of the 3D soda can). Brown further discloses the user to place a data point at the current position within the “sweet spot” and lock the point thereby allowing the user to snap to another item while allowing the above constraint, keeping the locked point aligned, to apply (see column

9, lines 59-65). It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the data point location techniques of Brown with the arbitrarily-shaped texture mapping techniques of Staiger et al. and material editing techniques of Staiger in order to provide an easier and more user-friendly interface, employing a sophisticated drawing aid based on the interpretation of the user controlled cursor supplying extensive feedback control to the user (see column 3, lines 22-34 of Brown). Further note, it would have been obvious to one of ordinary skill in the art to modify the combination of Staiger, Staiger et al. and Brown in order to enable a haptic constraint (“locking” and “sweet spot” functions of Brown) when a certain texture adjustment method is selected (translation, rotation, scaling techniques of Staiger) in order to automatically provide the haptic constraint without making the user manually turn on/off the constraint.

5. Claims 17 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Staiger, Phillip. (“Tutorial – Amapi 4.1.5 Material Editor” Revised January 1, 2001. © 2000-2001 TGS, Inc. <http://www.tgs.com>. Accessed on 09/08/2006 via <http://www.thebest3d.com/amapi/tutorials/materialeditor/>), Staiger et al. (“Tutorial – Getting started with Amapi 4.1” Revised July 9, 2003. © 2000 TGS, Inc. <http://www.tgs.com>. Accessed on 04/17/2007 via <http://www.thebest3d.com/amapi/tutorials/bottlesmile/index.html>), Brown (U.S. Patent 5,461,709) and further in view of Shahoian et al. (U.S. Patent 6,822,635 B2).

In reference to claims 17 and 19, Staiger, Staiger et al. and Brown disclose all of the claim limitations as applied to claims 16 and 18. Neither Staiger, Staiger et al. nor Brown explicitly disclose at least haptic detent active on an axis or loop of a cursor however Shahoian et al. does. Shahoian et al. discloses a haptic feedback touch control used to provide input to a

computer system whereby a haptic effect, or detent is felt by the user when he/she uses the touch control with fingers (see columns 1-2, lines 66-1 and column 23, lines 51-58). Shahoian et al. further discloses the touch control to provide such detents in X and Y directions or axes (see column 23, lines 23-27). It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the haptic detent techniques of Shahoian et al. with the data point location techniques of Brown, the arbitrarily-shaped texture mapping techniques of Staiger et al. and material editing techniques of Staiger in order to provide the user with a better sense of reality while controlling the computer system by translating the moving surface to a transition point between buttons and icons of the computer and user control device (see column 23, lines 56-58 of Shahoian et al.).

6. Claims 23-28 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Staiger, Phillip. ("Tutorial – Amapi 4.1.5 Material Editor" Revised January 1, 2001. © 2000-2001 TGS, Inc. <http://www.tgs.com>. Accessed on 09/08/2006 via <http://www.thebest3d.com/amapi/tutorials/materialeditor/>), Staiger et al. ("Tutorial – Getting started with Amapi 4.1" Revised July 9, 2003. © 2000 TGS, Inc. <http://www.tgs.com>. Accessed on 04/17/2007 via <http://www.thebest3d.com/amapi/tutorials/bottlesmile/index.html>) and further in view of Yanof et al. (U.S. Patent 5,371,778).

In reference to claim 23, Staiger discloses a tutorial for editing a soda can's geometry including applying various materials as 2D and 3D textures using the GUI of a program entitled Amapi (see page 1, before "Getting Started" and GUI of Figure on page 2). Staiger explicitly discloses applying a "label" to the soda can, the "label" made of from a 2D image (see page 11). Staiger discloses adjusting the 2D image, seen as functionally equivalent to the texture of

Applicant's claim, utilizing a 3D GUI element (see "*" marked Figures of page 12, specifically the adjusting element comprising black squares or "hotspots"). Note, the Office interprets this element to be 3D since it is shown as being drawn in a 3D space (referring to the 3D soda can) and also because the element itself is displayed in the user interface as comprising three dimensions (see for example, the sphere and cylindrical shaped elements of the "*" marked Figures of page 12 and how they are drawn to with a x, y and depth attributes). Staiger specifically states the "black squares" of the element to be "hotspots" allowing the user to select and modify these "hotspots" to re-orient (rotate), scale and translate (move) the mapped image or texture, therefore allowing the user to select the desired region of the soda can where the texture is mapped (see underlined portion of page 12 and "*" marked Figures of page 12). Staiger also discloses selecting the bottom of the can by simply clicking on the object and the ability of applying different materials to just that selected object/part (see pages 4-9). The Office interprets that this user-defined part is contiguous to the rest of the can since Applicant's remarks define the term, "contiguous" as "sharing an edge or boundary; touching" and "neighboring; adjacent" (see page 12 of Applicant's Remarks of 12/04/07). It can be seen from the Figures on pages 5, 9 and 10 that the bottom part of the soda can is "neighboring or adjacent" to the can and may also be considered less than the entire surface of the whole soda can. Although Staiger discloses the texture mapped onto a cylinder type of shape, Staiger does not explicitly disclose texture mapped onto an arbitrarily-shaped, user-defined region of a 3D virtual object. Staiger et al. discloses a tutorial for drawing a bottle using Amapi 4.1 (see pgs 10-24 and bottle in Figure of pg. 24). Staiger et al. explicitly discloses applying 2D or 3D texture to the bottle and an extracted piece, from the bottle object (pgs. 49-52 and especially pg. 51, paragraphs 3-5 and

Figure on pg. 52). Note, the Office interprets the extracted piece of the bottle (see Figure of pg. 52) equivalent to Applicant's arbitrarily-shaped user-defined region of a surface of the claims since the above mentioned shape of Staiger et al. is arbitrarily-shaped, as described in Applicant's arguments of 12/06/06, and since a user can draw/design a multitude of different shapes in Amapi 4.1 as disclosed by Staiger et al. with the extracted object of the bottle in the Figure on pg. 52. It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the arbitrarily-shaped texture mapping techniques of Staiger et al. with the material editing techniques of Staiger in order to supply a user with the capabilities to create customized drawing and modeling objects utilizing texture maps to add realistic effects to the objects. Note, the Office further believes the above combination of Staiger and Staiger et al. to be valid since both references are tutorials on utilizing the same design tool software, Amapi 4.1. Also, Staiger et al. explicitly discloses the extracted piece object of the bottle, which is inherently "less than the entire surface of the 3D object," i.e. the bottle, texture mapped (see Figures on pgs. 46 and 52 and paragraphs 3-5 of pg. 51). Neither Staiger nor Staiger et al. explicitly disclose modifying a transformation matrix used in mapping points on the surface of the object to texture however Yanof et al. does. Yanof et al. discloses a display and adjustment of 3D projections using a transformation matrix whereby if a change of viewing angle of the projection is made, the transformation matrix is modified (see column 2, lines 39-55 and column 7, lines 1-27). It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the transformation techniques of Yanof et al. with the arbitrarily-shaped texture mapping techniques of Staiger et al. and material editing techniques of

Staiger in order to provide a display system wherein a real-time adjustment of different views of a 3D object is performed (see column 2, lines 29-36 of Yanof et al.).

In reference to claim 24, Staiger, Staiger et al. and Yanof et al. disclose all of the claim limitations as applied to claim 23 above. Staiger discloses the soda can rendered after having mapped the “label” texture thereto (see page 14).

In reference to claim 25, Staiger, Staiger et al. and Yanof et al. disclose all of the claim limitations as applied to claim 24 above. Staiger discloses the soda can rendered after having mapped the “label” texture thereto (see page 14). Yanof et al. also discloses displaying an image including 4 additional view ports which “keep” depth values or k values consistent by showing distortions in 3D object faces (see column 4, lines 19-45 and Figure 2).

In reference to claim 26, Staiger, Staiger et al. and Yanof et al. disclose all of the claim limitations as applied to claim 25 above in addition, Yanof et al. discloses generating image volume data in the form of voxels (see column 3, lines 62-67).

In reference to claim 27, Staiger, Staiger et al. and Yanof et al. disclose all of the claim limitations as applied to claim 25 above in addition, Yanof et al. discloses an editing means enabling an operator to make an effective removal of unwanted voxels from the display region (see column 5, lines 17-30). Note, the Office interprets Yanof et al. to inherently disclose editing these voxels based upon an activation of a user signal as Yanof et al. further discloses using a cursor control means to move a cursor on the display (see column 2, lines 54-55).

In reference to claim 28, Staiger, Staiger et al. and Yanof et al. disclose all of the claim limitations as applied to claim 27 above. Note, the Office interprets Yanof et al. to inherently disclose editing these voxels based upon an activation of a user signal as Yanof et al. further

discloses using a cursor control means to move a cursor on the display (see column 2, lines 54-55) and a cursor positioning means such as a mouse or trackball (see column 8, lines 35-38) which comprise of buttons to click and release.

In reference to claim 41, Staiger, Staiger et al. and Yanof et al. disclose all of the claim limitations as applied to claim 23 above. As seen in the Figures of page 12 of Staiger, it is interpreted by the Office that the GUI element used to rotate, scale and translate mapped texture inherently comprises of an x, y and z axis since the element is drawn in a 3D space. Further the Office notes, that claim 41 does not explicitly disclose the graphical element as displaying an x, y and z axis and solely recite, "...wherein the graphical user interface element comprises an X-axis, a Y-axis and a Z-axis," (see claim 41).

7. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Staiger, Phillip. ("Tutorial – Amapi 4.1.5 Material Editor" Revised January 1, 2001. © 2000-2001 TGS, Inc. <http://www.tgs.com>. Accessed on 09/08/2006 via <http://www.thebest3d.com/amapi/tutorials/materialeditor/>), Staiger et al. ("Tutorial – Getting started with Amapi 4.1" Revised July 9, 2003. © 2000 TGS, Inc. <http://www.tgs.com>. Accessed on 04/17/2007 via <http://www.thebest3d.com/amapi/tutorials/bottlesmile/index.html>), Yanof et al. (U.S. Patent 5,371,778) and further in view of Brown (U.S. Patent 5,461,709).

In reference to claim 29, Staiger, Staiger et al. and Yanof et al. disclose all of the claim limitations as applied to claim 23 above. Neither Staiger, Staiger et al. nor Yanof et al. explicitly disclose arming or disarming a haptic constraint however Brown does. Brown discloses a system for supplying input data establishing the location of data points in a model space for a 3D CAD design application (see column 1, lines 5-7 and column 2, lines 5-8). Brown discloses the

ability to move the cursor close to an indexed point whereby a “sweet spot” of a few pixels wide is established near this indexed point and if the cursor is moved within this, “sweet spot” the cursor is locked into precisely a horizontal or vertical position with the indexed point (see column 9, lines 40-46). Note, the Office interprets the “sweet spot” of Brown functionally equivalent to the “gravity well” of Applicant’s claim. Brown further discloses the user to place a data point at the current position within the “sweet spot” and lock the point thereby allowing the user to snap to another item while allowing the above constraint, keeping the locked point aligned, to apply (see column 9, lines 59-65). Brown discloses locking and unlocking the point using a lock button (see column 9, line 65). It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the data point location techniques of Brown with the transformation techniques of Yanof et al. the arbitrarily-shaped texture mapping techniques of Staiger et al. and material editing techniques of Staiger in order to provide an easier and more user-friendly interface, employing a sophisticated drawing aid based on the interpretation of the user controlled cursor supplying extensive feedback control to the user (see column 3, lines 22-34 of Brown).

Response to Arguments

8. Applicant’s arguments, see pages 11-15 of Applicant’s Remarks, filed 12/04/07, with respect to the rejection(s) of claim(s) 1-42 and 45-48 under 35 U.S.C. 103(a) based upon the Staiger and Staiger et al. cited prior art have been fully considered and are persuasive.

Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of a new interpretation of the previously cited Staiger and

Staiger et al.. Note, Applicant's arguments filed 10/31/07 do not particularly traverse any of the prior art rejections or the applicable cited prior art since these arguments were submitted before the mailing of the Final Office action (see paragraphs 1-2, page 11 of Applicant's Remarks of 10/31/07). In view of Applicant's arguments of 12/04/07, with reference to claims 1-42 and 45-48, Applicant argues that none of the cited prior art teaches a three-dimensional graphical user interface element operable to adjust mapped texture within an arbitrarily shaped user-defined region of a surface of a virtual object without affecting a contiguous portion of the surface (see page 11 of Applicant's Remarks). Even further, Applicant argues that the Office's interpretation of Staiger II is invalid as the extracted piece of the bottle in Staiger II is not contiguous with the bottle itself (see pages 12-13 of Applicant's Remarks).

The Office notes that Staiger II does not explicitly disclose the surface of the arbitrarily shaped user-defined region contiguous to the rest of the bottle but has found further evidence in the disclosure of Staiger I that teaches such a limitation. In particular, Staiger discloses, in the tutorial, performing processing upon the bottom of the soda can that entails adding material to just this part of the can (see pages 4-5). Staiger discloses selecting the bottom of the can by simply clicking on the object and the ability of applying different materials to just that selected object/part (see pages 4-9). Although Staiger does state that such an object of the soda can, the bottom, is a separate part than the rest of the can (see bottom of page 4), the Office interprets that this user-defined part is contiguous to the rest of the can since Applicant's remarks define the term, "contiguous" as "sharing an edge or boundary; touching" and "neighboring; adjacent" (see page 12 of Applicant's Remarks of 12/04/07). It can be seen from the Figures on pages 5, 9 and

10 that the bottom part of the soda can is "neighboring or adjacent" to the can and therefore the Office believes such an interpretation to be valid.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Antonio Caschera whose telephone number is (571) 272-7781. The examiner can normally be reached Monday-Thursday and alternate Fridays between 7:00 AM and 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kee Tung, can be reached at (571) 272-7794.

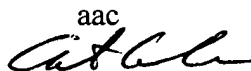
Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

571-273-8300 (Central Fax)

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (571) 272-2600.

aac

1/8/08

Antonio Caschera
Patent Examiner